Lori Washington
BP Whiting Refinery
P.O. Box 710
Whiting, IN 46394-0710

Re: 089-14450-00453
Exempt Construction and Operation Status

Dear Ms. Washington:

BP Whiting Refinery submitted a Part 70 operation permit on September 30, 1996 for a petroleum refinery located at 2815 Indianapolis Blvd., Whiting, IN 46394-2197. An application to modify the source was received on May 24, 2001. The request was made to notify OAQ of the following changes to the #12 Pipe Still:

(a) Fuel oil will no longer be used by Heaters H-1AN, H-1AS, H-1B and H-2.

(b) The burners on Heater H-2 will be replaced with ultra low-NOx burners. Firing capacity will remain unchanged at 174 million Btu per hour.

(c) The vacuum tower's transfer lines will be modified to allow a higher temperature feed to the vacuum tower.

(d) The vacuum tower's internal components will be modified to allow operation at high temperatures for longer periods of time.

Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the changes are classified as exempt from air pollution permit requirements. The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

    (a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

    (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

2. Pursuant to 326 IAC 6-1-10.1, particulate matter emissions from Heaters H-1AN, H-1AS, H-1B and H-2 shall not exceed 0.025 pounds per million Btu heat input.

3. Pursuant to 326 IAC 7-4-1.1 (Lake County Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from Heaters H-1AN, H-1AS, H-1B and H-2 shall not exceed 0.32 pounds per million Btu heat input.

4. Pursuant to 326 IAC 8-4-2 (Petroleum Refineries) the vacuum tower shall not emit any noncondensible VOC from condensers, hot wells or accumulators.

5. Pursuant to 326 IAC 8-4-8 (Leaks from Petroleum Refineries; Monitoring; Reports), the emission source shall develop and conduct a monitoring program addressing the guidelines contained in 326 IAC 8-4-8 (c) through (m).

On May 23, 2001, the Office of Air Quality (OAQ) received a letter from BP Whiting Refinery relating to the addition of a new tower, identified as T-391, to the Vapor Recovery Unit (VRU) 300 Merox Treating Section. This tower, used to improve mercaptan extraction, is classifiable as a trivial activity under 326 IAC 2-7-1(40)(A). The addition of Tower T-391 is hereby acknowledged. There are no specific rules applicable to the facility.

This approval will be incorporated into the pending Part 70 permit application, 089-6741-00453.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Allen R. Davidson at (800) 451-6027, press 0 and ask for extension 3-5693, or dial (317) 233-5693.

Sincerely,

Original signed by

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
ARD

cc: File - Lake County
U.S. EPA, Region V
Lake County Health Department
IDEM - Northwest Regional Office
Air Compliance Section Inspector - Rick Massoels
Compliance Data Section - Melinda Jones
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	**BP Whiting Refinery** (f.k.a. Amoco Whiting Refinery)
Source Location:	**2815 Indianapolis Blvd., Whiting, IN 46394-2197**
County:	**Lake**
SIC Code:	**2911**
Application No.:	**089-14450-00003**
Permit Reviewer:	**Allen R. Davidson**

On May 24, 2001, the Office of Air Quality (OAQ) received an application from BP Whiting Refinery relating to the following changes to the #12 Pipe Still:

(a) Fuel oil will no longer be used by Heaters H-1AN, H-1AS, H-1B and H-2.

(b) The burners on Heater H-2 will be replaced with ultra low-NOx burners. Firing capacity will remain unchanged at 174 million Btu per hour.

(c) The vacuum tower's transfer lines will be modified to allow a higher temperature feed to the vacuum tower.

(d) The vacuum tower's internal components will be modified to allow operation at high temperatures for longer periods of time.

On May 23, 2001, the Office of Air Quality (OAQ) received an application from BP Whiting Refinery relating to the addition of a new tower, identified as T-391, to the Vapor Recovery Unit (VRU) 300 Merox Treating Section. This tower, used to improve mercaptan extraction, is classifiable as a trivial activity under 326 IAC 2-7-1(40)(A). The two applications are being treated as a single application by OAQ.

History

Amoco Whiting Refinery submitted a Part 70 permit application (089-6741-00003) for a petroleum refinery on September 30, 1996. This application shall be incorporated in the submitted Part 70 application.

The emission source has since received four modifications:

(a) Minor Source Modification 089-11960-00003, which involved replacing storage tank #3705, was issued on June 6, 2000.

(b) Minor Source Modification 089-11984-00003, which acknowledged removal of the Lubes Unit for an emission reduction credit, was issued on July 20, 2000.

(c) Minor Source Modification 089-14239-00003, which involved a steam sharing plan with Whiting Clean Energy, was issued on May 11, 2001

(d) Significant Source Modification 089-13846-00003, which involved an additional tail gas unit at its Sulfur Recovery Unit, was issued on June 27, 2001.

This application will be the fifth modification to the Part 70 application.

Enforcement Issues

Part of this application is being sought in order to comply with a consent decree between BP Exploration & Oil Company and the U.S. EPA and nine states including Indiana. Among other requirements, the consent decree:

(a) requires all Claus trains at the sulfur recovery plant be subject to NSPS Subpart J. (This item was addressed in Significant Source Modification 089-13846-00003.)

(b) requires installation of a supplemental tail gas unit in order to achieve continuous compliance. (This item was addressed in Significant Source Modification 089-13846-00003.)

(c) requires installation and monitoring of a SO_2 CEMS on the stack of the bypass incinerator.

(d) requires elimination of all fuel oil burning at the heaters and boilers, on or before June 1, 2003.

(e) requires at least 30% of the heat input capacity for all heaters and boilers greater than 40 million Btu per hour use NOx emission control technologies approved in the consent decree.

The consent decree also places limits and restrictions on Fluidized Catalytic Cracking Units 500 and 600. Those requirements, which are part of later stages of the consent decree, will be addressed in future modifications.

Stack Summary

Stack information will be unchanged as a result of this application.

Recommendation

The staff recommends to the Commissioner that the application be approved as an exemption. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on May 24, 2001.

Emission Calculations

The elimination of fuel oil usage and the replacement of existing burners with ultra low-NOx burners are expected to reduce actual emissions. However, BP Whiting Refinery is not seeking an emission reduction credit for these changes. Because the amount of reduction is not quantified, the potential to emit will be unchanged.

The modifications to the vacuum tower and the transfer lines do not affect potential to emit.

There are no emission factors available in EPA document AP-42 for mercaptan extraction. All VOC emissions from this operation are fugitive. The applicant has used leak reports to calculate that the potential to emit VOC from T-391 is 0.15 tons per year.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	4,900
PM-10	4,900
SO_2	15,000
VOC	5,500
CO	361,800
NO_x	10,200

HAP's	Potential To Emit (tons/year)
Single	>10
TOTAL	>25

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of criteria pollutants is equal to or greater than 100 tons per year. The potential to emit a single hazardous air pollutant (HAP) is equal to or greater than ten (10) tons per year and the potential to emit a combination of HAP is greater than or equal to twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

This existing source is a major source for Prevention of Significant Deterioration, 326 IAC 2-2. It is in one of the 28 source categories and pollutants have the potential to emit at a rate of 100 tons per year or more.

The revision's potential to emit is as follows:

Pollutant	Potential To Emit (tons/year)
PM	0.0
PM-10	0.0
SO_2	0.0
VOC	0.15
CO	0.0
NO_x	0.0

HAPs	Potential To Emit (tons/year)
TOTAL	negligible

The potential to emit (as defined in 326 IAC 2-7-1(29)) volatile organic compounds (VOC) is less than 15 pounds per day (2.73 tons per year). Therefore, the application does not require review under 326 IAC 2-7-10.5(d)(10) and can be classified as exempt under 326 IAC 2-1.1-3.

This application is not a major modification for Emission Offset, 326 IAC 2-3, because the increase in potential to emit is less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Actual Emissions

The following table shows the actual emissions from the source for the year 1999:

Pollutant	Actual Emissions (tons/year)
PM-10	849
SO_2	7650
VOC	1440
CO	6791
NO_x	10,087

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM-10	nonattainment (moderate)
SO_2	nonattainment (primary)
NO_2	attainment
Ozone	nonattainment (severe)
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and NO_X emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as nonattainment for ozone. VOC and NO_X emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this application.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 40 CFR Part 63) applicable to this application.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it is located in one of the eight counties listed in the rule and it has the potential to emit more than ten (10) tons per year of volatile organic compounds or nitrogen oxides. Pursuant to this rule, the source must annually submit an emission statement for the source. The annual statement must contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 8-4-8 (Leaks from Petroleum Refineries; Monitoring; Reports)

Pursuant to 326 IAC 8-4-8, the emission source shall develop and conduct a monitoring program addressing the guidelines contained in 326 IAC 8-4-8 (c) through (m).

State Rule Applicability - Heaters H-1AN, H-1AS, H-1B and H-2

326 IAC 6-1-10.1 (Lake County PM_{10} Emission Requirements)

Pursuant to 326 IAC 6-1-10.1, particulate matter emissions from Heaters H-1AN, H-1AS, H-1B and H-2 shall not exceed 0.025 pounds per million Btu heat input.

326 IAC 7-4-1.1 (Lake County Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-4-1.1 (Lake County Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from Heaters H-1AN, H-1AS, H-1B and H-2 shall not exceed 0.32 pounds per million Btu heat input.

State Rule Applicability - Vacuum Tower

326 IAC 8-4-2 (Petroleum Refineries)

Pursuant to 326 IAC 8-4-2 (Petroleum Refineries) this facility shall not emit any noncondensible VOC from condensers, hot wells or accumulators.

Conclusion

These changes shall be subject to the conditions of the attached exemption, No. 089-14450-00003.